CLAIM AMENDMENTS

1   1.   (original) Method for measuring the polarization
2   mode dispersion of an optical fiber applying an optical signal to a
3   first end of the fiber (11) and coupling a second end of the fiber
4   (111) to an interferometer (25), said method comprising the step
5   of:
6   generating by means of said interferometer (25) at least
7   one interferogram comprising at least a central peak and two side
8   lobes having a determined information content; and being character-
9   ized by the steps of
10   processing said interferogram in such a way as to measure
11   the information content of at least one of said two side lobes;
12   and
13   determining the polarization mode dispersion of the fiber
14   associating to said measurement of said information content a
15   probability density function representative of the polarization
16   mode dispersion (PMD) of the fiber in the form of differential
17   group delay.

1   2.   (original) Method as claimed in claim 1 character-
2   ized in that said step of determining the polarization mode disper-
3   sion comprises the step of
4   computing the deconvolution of said at least one side
5   lobe with said central peak so that said deconvolution corresponds

6   to the probability density of the differential group delay deter-

7   mined by the PMD of the fiber.

1   3.   (currently amended) Method as claimed in claim 1

2   [[or 2]] characterized by the additional step of

3   determining an average of measurements of said informa-

4   tion content whereto said probability density is to be associated.

1   4.   (currently amended) Method as claimed ~~in any of the~~

2   ~~previous claims~~ claim 1, characterized in that said information

3   content comprises a single numeric value determined by the position

4   of said at least one side lobe in the interferogram.

1   5.   (currently amended) Method as claimed in ~~claims 1~~

2   ~~through 3~~ claim 1 characterized in that said information content

3   comprises a plurality of values determined by the position of said

4   at least one side lobe in the interferogram.

1   6.   (currently amended) Computer product able to be

2   directly loaded in the internal memory of an electronic measuring

3   device and comprising portions of software code to implement the

4   method as claimed in ~~any of the claims from 1 to 5~~ claim 1 when the

5   product is run on said electronic device.

1   7.   (original)   System for measuring the polarization

2   mode dispersion of an optical fiber, comprising

3   an optical source (21) able to generate an optical signal

4   to be injected into the fiber (11) ;

5   an interferometer (25) associated to the fiber and able

6   to generate an interferogram comprising at least a central peak and

7   two side lobes having a determined information content;

8   characterized by

9   a device (27) connected to said interferometer and able

10   to

11   process said interferogram in such a way as to

12   measure the information content of at

13   least one of said side lobes; and

14   ~~determining~~ <u>determine</u> the polarization mode

15   dispersion of the fiber associating to

16   said measurement of said information con-

17   tent a probability density function repre-

18   sentative of the polarization mode disper-

19   sion (PMD) of the fiber in the form of

20   differential group delay.

1   8.   (original) System as claimed in claim 7, character-
2 ized in that said device (27) comprises
3   a first module able to compute the deconvolution of said
4 at least one side lobe with said central peak so that said
5 deconvolution corresponds to the probability density of the differ-
6 ential group delay determined by the PMD of the fiber.

1   9.   (currently amended) System as claimed in claim 7
2 [[or 8]], characterized in that said device comprises
3   a second module able to determine an average of measure-
4 ments of said information content whereto said probability density
5 is to be associated.

1   10. (original) Device for measuring the polarization
2 mode dispersion of an optical fiber into which optical signals have
3 been injected, comprising
4   an opto-electronic module (37) able to convert the
5 optical signals into electrical signals;
6   a display device (35) able to generate an interferogram
7 comprising at least a central peak and two side lobes having a
8 determined information content; characterized by
9   a control unit (30) able to
10   measure the information content of at least one
11   of said two side lobes; and

12   ~~determining~~ <u>determine</u> the polarization mode

13   dispersion of the fiber associating to

14   said measurement of said information con-

15   tent a probability density function repre-

16   sentative of the polarization mode disper-

17   sion (PMD) of the fiber in the form of

18   differential group delay.

1   11.   (original) Device as claimed in claim 10, charac-

2   terized in that it comprises

3   a first program module able to compute the deconvolution

4   of said at least a side lobe with said central peak so that said

5   deconvolution corresponds to the probability density of the differ-

6   ential group delay determined by the PMD of the fiber.

1   12.   (currently amended) Device as claimed in claim 10

2   [[or 11]], characterized in that it comprises

3   a second program module able to determine an average of

4   measurements of said information content whereto said probability

5   density is to be associated.